

REMARKS

The Office Action mailed on September 30, 2005, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 12-28 were pending. By this paper, Applicants do not cancel any claims, and add claims 29-32. Therefore, claims 12-32 are now pending.

Applicants respectfully submit that the present application is in condition for allowance for at least the reasons that follow.

Rejections Under 35 U.S.C. § 102

Claims 12-14 and 16-23 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kawada (United States Patent No. 5,350,720). In response, in order to advance prosecution, and without prejudice or disclaimer, Applicants (i) have placed claim 17 into independent form, and hereby traverse the rejection of this claim and the claims that now depend therefrom, and (ii) have made the above amendment to independent claim 12. Applicants respectfully submit that the above claims are allowable for at least the reasons that follow.

Applicants rely on MPEP § 2131, entitled "Anticipation – Application of 35 U.S.C. 102(a), (b), and (e)," which states that a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." It is respectfully submitted Kawada does not describe each and every element of either of claims 12 and 17, and thus does not describe each and every element of any claim that depends therefrom.

Claim 12: Claim 12, as amended, recites a carbon heating element comprising carbon acting as a good conductor and boron nitride acting as a conductivity-inhibiting

material, *said boron nitride being dispersed in said carbon.*¹ In an exemplary embodiment of the invention of claim 12, as is detailed on page 4 of the specification, there is a heating element where boron nitride is so dispersed so that “current jumps over, namely, hops over the metal or metalloid compounds which are conductivity-inhibiting material, and flows through the carbon material.”

Kawada does not disclose, either explicitly or inherently, a heating element where boron nitride is dispersed within carbon. Indeed, Kawada teaches just the opposite. At col. 1, lines 44-48, Kawada specifically states that “a ceramic heater . . . has been developed in which *the substrate plate* is formed from boron nitride . . . and *the heater element is provided thereon* in the form of a layer of carbon deposited by the pyrolysis of a carbon-containing compound.” (Emphasis added.) That is, the boron nitride is not dispersed within the carbon. Instead, the carbon is deposited on the boron nitride. Thus, Kawada does not anticipate claim 12, nor does Kawada anticipate claims 13-14 and 19-23, claims that depend from claim 12.

Claim 17: Claim 17 stands amended to be in independent form (*i.e.*, the recitations of formerly pending claim 12, before the above amendment to claim 12, have been added to claim 17), and claims 18 and 19 have been amended to depend from claim 17. Applicants traverse the rejection of these claims.

The Kawada reference is completely silent in regards to a teaching of the resistance of a carbon heating element. At most, Kawada teaches is a heating element made of carbon. Recognizing this, the Office Action relies on an inherency rationale to substantiate its anticipation rejection, stating that “the carbon heater **inherently** ha[s] a specific resistance in a range of 0.0003 or 0.0045 to 0.0075 ohm-cm.” Applicants traverse this assertion.

Applicants respectfully rely on MPEP § 2112, which states that while “a rejection under 35 U.S.C. §102/103 can be made when the prior art product seems to be identical except that the prior art is silent to an inherent characteristic,” the “[E]xaminer *must* provide rationale or evidence tending to show inherency.” (MPEP § 2112, subsections 3 and 4, emphasis added.) It is respectfully submitted that no evidence tending to show inherency has

¹ Support for this amendment may be found, among other places, at page 4, lines 22-26 of the specification as originally filed.

been provided in the present Office Action. It is respectfully submitted that § 2112 inherency is not being properly implemented by the PTO. In arriving at this conclusion, Applicants provide the following excerpt from MPEP § 2112:

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijkaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). “To establish inherency, the extrinsic evidence ‘must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.’” *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.)

(Emphasis added.)

Inherency means that *the missing descriptive matter is necessarily present* in the reference. The courts have allowed the PTO to rely on inherency arguments to free the PTO from the burden of finding references which explicitly state that inherent elements are present. This is because if certain characteristics are inherent, the references will most probably not mention these elements, and, as such, will be difficult to find. For example, it is not necessary to find a reference that explicitly states that plutonium 239 is radioactive, as plutonium 239 is always radioactive. That is, radioactivity is an inherent feature of plutonium 239. However, inherency is not a panacea that enables the PTO to use references which are *deficient* in teaching certain elements of a claim. Recognizing the power of the inherency argument, the courts have tempered its use, as is detailed in § 2112, where the PTO has

stipulated that examiners must follow certain procedures before invoking inherency. Namely, the “examiner must provide rationale or evidence tending to show inherency.”

In the present case, no such rationale or evidence has been provided in the Office Action. The statement that “the carbon heater inherently ha[s] a specific resistance in a range of 0.0003 or 0.0045 to 0.0075 ohm-cm” does not satisfy the PTO’s burden to provide rationale or evidence showing that “the missing descriptive matter is *necessarily* present.” Assuming *arguendo* that it might have been desirable to have a heating element with such resistances *does not mean that such properties are always present*. Just the opposite is true: it is entirely possible that the heating element of Kawada would have resistances well outside the recited ranges. The subject matter claimed in claims 17-19 is not *necessarily present* in Kawada. It is entirely probable that the heating element of Kawada will be practiced without an element having the recited resistances. Just as was the case of the third fastener in the example provided in the MPEP quoted above, the subject matter of Applicants’ claims is not expressly or inherently disclosed in Kawada. **Thus, a reference that explicitly teaches these recitations must be found, else the claims must be allowed.** Since Kawada is silent in regard to the resistances recited in claims 17-19, these claims are allowable.

Claim Rejections Under 35 U.S.C. §103(a)

In the Office Action, Claims 15 and 24-15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kawada in view of Hurd (U.S. Patent No. 2,544,320), with claims 26-28 being rejected under the same statute in view of Kawada in view of Kawaku[d]o (assumed to be U.S. Patent No. 4,950,443). Applicants respectfully traverse the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that at least the first and third criteria of MPEP § 2143 have not been met in the Office Action.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 was satisfied in the Office Action (which it is not, as explained below), the cited references still do not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

As a preliminary matter, all of the claims rejected as obvious now recite either (i) that said boron nitride is dispersed in said carbon or (ii) that said metal or metalloid compound acting as a conductivity-inhibiting material is dispersed within said carbon. As noted above, Kawada does not disclose such a dispersion with regard to boron nitride, and thus does not disclose such a dispersion with respect to a metal or metalloid compound acting as a conductivity-inhibiting material. The remaining references do not remedy this deficiency of Kawada. Thus, none of the claims are obvious for at least this reason. Moreover:

As to claims 15, 24 and 25, Hurd does not teach a carbon heating element having a rectangular cross section. It is respectfully submitted that contrary to the assertions of the Office Action, carbon heater 15, as depicted in Fig. 2 of Hurd, appears to have a circular cross section, based at least on the use of shadowing in that figure. The specification of Hurd does not mention a rectangular cross section. Claims 15, 24 and 25, and the claims that depend therefrom, are thus not obvious for this reason as well.

In sum, even if the first requirement of MPEP § 2143 is satisfied, the third requirement of MPEP § 2143 is not satisfied in the Office Action, since the cited references do not teach each and every element of the present invention. Thus, the present claims are allowable.

Lack of Suggestion or Motivation to Modify or Combine the References

MPEP § 2143.01 states that “the prior art *must* suggest the desirability of the invention.” (MPEP § 2143.01, subsection 1, emphasis added.) In rejecting claims 15 and 24-25, the Office Action does not provide motivation to modify Kawada, let alone prove evidence that the prior art suggested such a modification.

The Office Action merely asserts that it “would have been obvious . . . to modify Kawada’s invention . . . in order to have a shape of the heater determined by the user having a desired *result* in mind.” (Office Action, page 3, paragraph 4, emphasis added.) Applicants respectfully submit that a *result* is not the same as a *reason why* one of ordinary skill in the art would be motivated to combine the references, however desirable those results may be. If motivation to combine references to establish a *prima facie* case of obviousness could merely be satisfied by a result-oriented analysis of the prior art, the first requirement (and second requirement) of MPEP § 2143 would be completely vitiated. This is because by identifying references that teach each individual element of a claimed invention, implementation of the teachings of the cited references almost always necessarily provides results according to a given invention under examination. Indeed, such an analysis relies on impermissible circular reasoning.

In contrast to the result-oriented analysis proffered in the Office Action, the MPEP specifically states that “the prior art must suggest the desirability of the claimed invention.” The Office Action, in relying only on results, does not identify where the prior art suggests the desirability of a heater as recited in claims 15 and 24-25.

Still further, the Office Action appears to rely on the alleged ease by which the references can be combined, contrary to the procedures stipulated in the MPEP. The MPEP specifically states that the “mere fact that references can be combined or modified does **not** render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” (MPEP § 2143.01, subsection 3, first sentence, citations omitted.)

The first requirement of MPEP § 2143 has not been met with respect to claims 15 and 24-25, and thus a *prima facie* case of obviousness with respect to these claims has not been established for yet another reason.

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In regards to claims 26-28, the Office Action merely asserts that it “would have been obvious . . . to modify Kawada’s invention to include the method of making the carbon product as taught by Kawabu[d]o because (i) they disclose all structure elements of the invention and (ii) are capable of so perform.” (Office Action, sentence spanning pages 3-4, numbers added.) Again, this is not proper motivation to modify or combine references. First, the alleged disclosure of “all structure elements of the invention” (reason “i”) addresses the *third* requirement of MPEP § 2143, not the *first* requirement of MPEP § 2143, and thus it has nothing to do with motivation to combine. That is, the above discussions regarding the first requirement of MPEP § 2143 are equally applicable in this instance as well.

As to the assertion that the references are “capable of so perform[ing],” (reason “ii”) this addresses, to a limited extent, the *second* requirement of MPEP § 2143 (reasonable expectation of success: references can be modified or combined to reject a claim as obvious only if there is a reasonable expectation of success) not the *first* requirement of MPEP § 2143. This is not motivation to modify at all, and, in fact, is circular logic. If motivation to modify or combine a reference could be satisfied merely because references are “capable” of so being modified or combined or successfully performing as desired, there would always be motivation to modify prior art in the case of an invention that worked. Indeed, the deficiencies of this rationale are clearly seen by considering the converse of the argument: if a combined reference was not capable of performing as desired, the resulting device would not work, and thus, under the rationale proffered in the Office Action, *the only inventions that would not be obvious are inventions that do not work!*

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In summary, because of the lack of suggestion or motivation in the prior art to modify the references, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established.

New Claims

As seen above, Applicants have added new claims 29-32. These claims are allowable due at least to their ultimate dependency from either of claims 12 and 17, which are allowable, and for the additional reasons that the prior art does not disclose or suggest the additional features of these claims. Support for these new claims may be found, among other places, at page 4 of the specification as originally filed.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Fastovsky is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

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The Commissioner is hereby authorized to
charge any deficiency or credit any over-
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